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**From:** Grill, Mike A.@Waterboards [Mike.Grill@Waterboards.ca.gov]  
**Sent:** 7/3/2018 7:32:21 PM  
**To:** Peter Moyle [pbmoyle@ucdavis.edu]; Wikert, John [john\_wikert@fws.gov]  
**CC:** Yee, Betty@Waterboards [Betty.Yee@waterboards.ca.gov]; McFadin, Bryan@Waterboards [Bryan.McFadin@waterboards.ca.gov]; Anderson, William@Waterboards [William.Anderson@waterboards.ca.gov]; Souza, Kelly@Wildlife [Kelly.Souza@Wildlife.ca.gov]; Louie, Stephen@Wildlife [Stephen.Louie@wildlife.ca.gov]; Cabrera-Stagno, Valentina [Cabrera-Stagno.Valentina@epa.gov]; Thompson, Brian [Thompson.Brian@epa.gov]; Maurano, Stephen [Maurano.Stephen@epa.gov]; monica.gutierrez@noaa.gov; Melanie.Okoro@noaa.gov; Villalobos, Amber@Wildlife [Amber.Villalobos@Wildlife.ca.gov]; Nelson, Jonathan@Wildlife [Jonathan.Nelson@wildlife.ca.gov]; Titus, Rob@Wildlife [Rob.Titus@wildlife.ca.gov]; Worth, Daniel@Waterboards [Daniel.Worth@waterboards.ca.gov]; Holland, Matthew@Waterboards [Matthew.Holland@waterboards.ca.gov]; nafangue@ucdavis.edu; ralusardi@ucdavis.edu; kwzillig@ucdavis.edu; benjamin.martin@noaa.gov; Plachta, Walter J.@Waterboards [Walter.Plachta@Waterboards.ca.gov]  
**Subject:** RE: [EXTERNAL] Temperature Criteria for Central Valley Salmonids - UC Santa Cruz Candidate Streams

Hello all,

I have received a few comments on Ben's latest deliverable. Each provided great insight and knowledge. Please keep the comments coming through July 18<sup>th</sup>. In speaking with Ben the next deliverable (a draft method demonstration) is scheduled for the middle of July and will be sent out for comment upon receipt. We hope to schedule a webinar sometime at the end of July or the beginning of August; to discuss both of these deliverables. Thank you for continued effort on this project.

Mike Grill

**From:** Peter Moyle [mailto:pbmoyle@ucdavis.edu]  
**Sent:** Saturday, June 30, 2018 2:47 PM  
**To:** Wikert, John <john\_wikert@fws.gov>  
**Cc:** Yee, Betty@Waterboards <Betty.Yee@waterboards.ca.gov>; McFadin, Bryan@Waterboards <Bryan.McFadin@waterboards.ca.gov>; Anderson, William@Waterboards <William.Anderson@waterboards.ca.gov>; Souza, Kelly@Wildlife <Kelly.Souza@Wildlife.ca.gov>; Louie, Stephen@Wildlife <Stephen.Louie@wildlife.ca.gov>; Cabrera-Stagno.Valentina@epa.gov; Thompson.Brian@epa.gov; Stephen Maurano <maurano.stephen@epa.gov>; monica.gutierrez@noaa.gov; Melanie.Okoro@noaa.gov; Villalobos, Amber@Wildlife <Amber.Villalobos@Wildlife.ca.gov>; Nelson, Jonathan@Wildlife <Jonathan.Nelson@wildlife.ca.gov>; Titus, Rob@Wildlife <Rob.Titus@wildlife.ca.gov>; Worth, Daniel@Waterboards <Daniel.Worth@waterboards.ca.gov>; Holland, Matthew@Waterboards <Matthew.Holland@waterboards.ca.gov>; nafangue@ucdavis.edu; ralusardi@ucdavis.edu; kwzillig@ucdavis.edu; benjamin.martin@noaa.gov; Grill, Mike A.@Waterboards <Mike.Grill@Waterboards.ca.gov>; Plachta, Walter J.@Waterboards <Walter.Plachta@Waterboards.ca.gov>  
**Subject:** Re: [EXTERNAL] Temperature Criteria for Central Valley Salmonids - UC Santa Cruz Candidate Streams

My responses are similar to John's:

Stanislaus and Tuolumne salmon runs are heavily driven by hatchery returns; very high mortality of juveniles through Delta.

Cosumnes does not really have a wild salmon run any more as far as I can tell; fish in years when they make it up the river are presumably of hatchery origin. The lower reaches dry up quickly because there is a 'cone of depression' under the river from past pumping that sucks up the flows. That being said, there is a lot of interest in the river. Suggest you contact Carson Jeffres ([cjjeffres@ucdavis.edu](mailto:cjjeffres@ucdavis.edu)) for a realistic perspective on the river.

Deer Creek I would think would be preferable to Mill, Antelope Creek or Big Chico creeks; it contains the full suite of native fishes and has a bigger run of spring and fall salmon and steelhead. Mill Creek headwaters are in hot springs in Lassen NP.

The rivers with dams all have a strong hatchery component to their salmon runs, so numbers are driven largely by hatchery practices and ocean conditions. American River might be interesting because in most years water is released in summer to help keep the Delta fresh.

Battle Creek is interesting just because it is different, largely spring-fed.

Each stream of course has its own idiosyncrasies. Let me know if you want further in out.

Peter

On Fri, Jun 29, 2018 at 1:52 PM, Wikert, John <[john\\_wikert@fws.gov](mailto:john_wikert@fws.gov)> wrote:

My quick \$0.02 on the proposed watersheds:

Yuba - Heavily impacted by hatchery straying. Limited reservoir storage results in a flashier hydrograph than many other Central Valley rivers of similar size. Good management of coldwater pool results in cooler water temperatures.

Tuolumne - High flow variability, from little water left in the stream to massive flood releases. Chinook numbers are very low relative to historic conditions. Minimal amount of fall attraction flow has reduced escapement and also straying of hatchery fish in to the river relative to adjacent watersheds.

Stanislaus - Consistent water volumes available due to 2009 NMFS OCAP Biological Opinion (~35% of unimpaired flow). High hatchery straying rates in recent years (likely >80% hatchery origin in escapement).

Mill - no comments

Cosumnes - Salmonid populations are largely constrained by the greatly reduced period of connectivity as groundwater overdraft disconnects the river from the "Delta". This delays or prevents upmigration in the fall, and can strand outmigrating juveniles in the spring.

I'm happy to chat about my comments if anyone would find it useful.

Cheers.

On Fri, Jun 29, 2018 at 12:06 PM, Yee, Betty@Waterboards <[Betty.Yee@waterboards.ca.gov](mailto:Betty.Yee@waterboards.ca.gov)> wrote:

Attached is the candidate list of streams for the UC Santa Cruz contract to develop a methodology for deriving temperature criteria. The next step is to identify three streams to apply the methodology. Due to contract limitations, UC Santa Cruz had a short time frame to perform this work so was unable to do any field work. So, the final result is not expected to be the actual criteria for any of these streams. But it may be close enough that UC Santa Cruz will be able to recommend the additional studies that will lead to actual criteria.

The attached list contains information on the various streams and recommendations of which three streams to focus on. We would like the Steering Committee's thoughts on the

recommendations by 18 July. Please send comments to Mike Grill at [Mike.Grill@Waterboards.ca.gov](mailto:Mike.Grill@Waterboards.ca.gov). He will be your new technical contact. His phone number is (559) 445-6083.

Today is my last day before retirement. Thank you for helping me with this project. I've enjoyed working with all of you and hearing your perspectives. Ben, Nann, Ken and Robert, thanks for taking on these contracts and trying to bring order to this topic. These two projects will provide a lot more clarity to the way forward.

Good luck to everyone and my best wishes for the successful conclusion of this project.

Betty

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Betty Yee

California Regional Water Quality Control Board

Central Valley Region

11020 Sun Center Drive, #200

Rancho Cordova, CA 95670

916-464-4643

FAX: 916-464-4780

Email: [betty.yee@waterboards.ca.gov](mailto:betty.yee@waterboards.ca.gov)

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**J.D. Wikert**

U.S. Fish & Wildlife Service

Anadromous Fish Restoration Program

850 S. Guild Avenue, Suite 105,

Lodi , CA 95240

(209) 334-2968 ext. 403

(209) 403-1046 - Cellular

Email: john\_wikert@fws.gov

Stanislaus River Salmon Festival: <https://www.facebook.com/SRSFest>

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Peter B Moyle

Distinguished Professor, Emeritus

Department of Wildlife, Fish, and Conservation Biology

Center for Watershed Sciences

425 La Rue Avenue

University of California

Davis CA 95616

Office: 1201 Center for Watershed Sciences

Tel: 530-574-6695

<https://watershed.ucdavis.edu/cws-wfcb-fish-conservation-group>